

of an apparatus for hardness testing and surface imaging incorporating the sensor of the present invention;--

Page 36, line 6, after "embodiment," insert --as shown in Fig. 2A,--.

Page 36, line 13, after "embodiment," insert --as shown in Fig. 2B,--.

Page 36, line 23, after "embodiment," insert --as shown in Fig. 2C,--.

In the Claims

Rewrite claim 4 as follows:

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4x. (Amended) [The apparatus of claim 1,] In a scanned probe microscope apparatus having a probe and a scanning head arranged for operative engagement of a surface of a sample for measuring a surface topography thereof, the improvement comprising:

- a. said probe having a hardness greater than a sample to be tested;
- b. a force sensor operatively located to measure the force between said sample and said probe, said force sensor having an output signal, wherein said force sensor includes,
  - i. a pair of capacitive transducers, each transducer including a separate

drive plate, the first of said drive plates having a hole centrally disposed therethrough, and a shared pick-up plate, said pick-up plate positioned between said separate drive plates and separated from each drive plate by an insulating spacer, said drive plates having spaced opposing conductive surfaces when said pick-up plate is mounted therebetween, said pick-up plate further including a conductive central plate suspended by spring means between said drive plates, wherein said central plate is capable of deflection between the conductive surfaces of each of said drive plates; and

ii. means for transmitting force from a point remote from said central plate to said central portion;

c. means for measuring the output signal of said force sensor and utilizing said output signal to control a vertical movement of said scanning head to maintain a constant force on a sample as said surface topography is measured; and

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- d. wherein said probe is mounted on said force sensor and said force sensor is further mounted on said scanning head for operatively engaging said sample on a fixed surface.
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[ Cancel claim 41 without prejudice.